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RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/385,918

DATE: 09/09/1999  
TIME: 10:44:30

Input Set: I385918.RAW

This Raw Listing contains the General Information  
Section and up to first 5 pages.

ENTERED

1 <110> APPLICANT: Hoekstra, Merl F.  
2 Xie, Weilin  
3 Murray, Brion  
4 Mercurio, Frank  
5 <120> TITLE OF INVENTION: METHODS FOR MODULATING SIGNAL  
6 TRANSDUCTION MEDIATED BY TGF-BETA AND RELATED PROTEINS  
7 <130> FILE REFERENCE: 860098.433  
8 <140> CURRENT APPLICATION NUMBER: US/09/385,918  
9 <141> CURRENT FILING DATE: 1999-08-30  
10 <160> NUMBER OF SEQ ID NOS: 32  
11 <170> SOFTWARE: FastSEQ for Windows Version 3.0  
12 <210> SEQ ID NO 1  
13 <211> LENGTH: 108  
14 <212> TYPE: PRT  
15 <213> ORGANISM: Homo sapien  
16 <220> FEATURE:  
17 <221> NAME/KEY: VARIANT  
18 <222> LOCATION: (1)...(1)  
19 <223> OTHER INFORMATION: Xaa = Tyrosine or Phenylalanine  
20 <220> FEATURE:  
21 <221> NAME/KEY: VARIANT  
22 <222> LOCATION: (2)...(4)  
23 <223> OTHER INFORMATION: Xaa = any amino acid; 0-1 residues may be missing  
24 <220> FEATURE:  
25 <221> NAME/KEY: VARIANT  
26 <222> LOCATION: (6)...(16)  
27 <223> OTHER INFORMATION: Xaa = any amino acid; 0-3 residues may be missing  
28 <220> FEATURE:  
29 <221> NAME/KEY: VARIANT  
30 <222> LOCATION: (20)...(20)  
31 <223> OTHER INFORMATION: Xaa = any amino acid  
32 <220> FEATURE:  
33 <221> NAME/KEY: VARIANT  
34 <222> LOCATION: (22)...(22)  
35 <223> OTHER INFORMATION: Xaa = Valine, Isoleucine or Leucine  
36 <220> FEATURE:  
37 <221> NAME/KEY: VARIANT  
38 <222> LOCATION: (23)...(27)  
39 <223> OTHER INFORMATION: Xaa = any amino acid  
40 <220> FEATURE:  
41 <221> NAME/KEY: VARIANT  
42 <222> LOCATION: (29)...(29)  
43 <223> OTHER INFORMATION: Xaa = any amino acid  
44 <220> FEATURE:

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45 <221> NAME/KEY: VARIANT  
46 <222> LOCATION: (30)...(30) /  
47 <223> OTHER INFORMATION: Xaa = Lysine or Arginine  
48 <220> FEATURE:  
49 <221> NAME/KEY: VARIANT  
50 <222> LOCATION: (31)...(33) /  
51 <223> OTHER INFORMATION: Xaa = any amino acid  
52 <220> FEATURE:  
53 <221> NAME/KEY: VARIANT  
54 <222> LOCATION: (34)...(34) /  
55 <223> OTHER INFORMATION: Xaa = Leucine or Valine  
56 <220> FEATURE:  
57 <221> NAME/KEY: VARIANT  
58 <222> LOCATION: (37)...(37) /  
59 <223> OTHER INFORMATION: Xaa = Valine or Leucine  
60 <220> FEATURE:  
61 <221> NAME/KEY: VARIANT /  
62 <222> LOCATION: (40)...(40)  
63 <223> OTHER INFORMATION: Xaa = Threonine or Serine  
64 <220> FEATURE:  
65 <221> NAME/KEY: VARIANT /  
66 <222> LOCATION: (41)...(41)  
67 <223> OTHER INFORMATION: Xaa = any amino acid  
68 <220> FEATURE:  
69 <221> NAME/KEY: VARIANT /  
70 <222> LOCATION: (45)...(45) /  
71 <223> OTHER INFORMATION: Xaa = Leucine, Valine, Methionine, Alanine or  
72 Isoleucine  
73 <220> FEATURE:  
74 <221> NAME/KEY: VARIANT /  
75 <222> LOCATION: (46)...(46)  
76 <223> OTHER INFORMATION: Xaa = any amino acid  
77 <220> FEATURE:  
78 <221> NAME/KEY: VARIANT /  
79 <222> LOCATION: (49)...(50) /  
80 <223> OTHER INFORMATION: Xaa = any amino acid  
81 <220> FEATURE:  
82 <221> NAME/KEY: VARIANT /  
83 <222> LOCATION: (52)...(61)  
84 <223> OTHER INFORMATION: Xaa = any amino acid; 0-6 residues may be missing  
85 <220> FEATURE:  
86 <221> NAME/KEY: VARIANT /  
87 <222> LOCATION: (63)...(71)  
88 <223> OTHER INFORMATION: Xaa = any amino acid; 0-2 residues may be missing  
89 <220> FEATURE:  
90 <221> NAME/KEY: VARIANT /  
91 <222> LOCATION: (74)...(75)  
92 <223> OTHER INFORMATION: Xaa = any amino acid  
93 <220> FEATURE:  
94 <221> NAME/KEY: VARIANT

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RAW SEQUENCE LISTING  
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95 <222> LOCATION: (81)...(81)  
96 <223> OTHER INFORMATION: Xaa = any amino acid  
97 <220> FEATURE:  
98 <221> NAME/KEY: VARIANT  
99 <222> LOCATION: (86)...(86)  
100 <223> OTHER INFORMATION: Xaa = any amino acid  
101 <220> FEATURE:  
102 <221> NAME/KEY: VARIANT  
103 <222> LOCATION: (88)...(88)  
104 <223> OTHER INFORMATION: Xaa = any amino acid  
105 <220> FEATURE:  
106 <221> NAME/KEY: VARIANT  
107 <222> LOCATION: (90)...(92)  
108 <223> OTHER INFORMATION: Xaa = any amino acid  
109 <220> FEATURE:  
110 <221> NAME/KEY: VARIANT  
111 <222> LOCATION: (93)...(93)  
112 <223> OTHER INFORMATION: Xaa = Leucine or Methionine  
113 <220> FEATURE:  
114 <221> NAME/KEY: VARIANT  
115 <222> LOCATION: (94)...(95)  
116 <223> OTHER INFORMATION: Xaa = any amino acid  
117 <220> FEATURE:  
118 <221> NAME/KEY: VARIANT  
119 <222> LOCATION: (96)...(96)  
120 <223> OTHER INFORMATION: Xaa = Arginine or Lysine  
121 <220> FEATURE:  
122 <221> NAME/KEY: VARIANT  
123 <222> LOCATION: (98)...(99)  
124 <223> OTHER INFORMATION: Xaa = any amino acid  
125 <220> FEATURE:  
126 <221> NAME/KEY: VARIANT  
127 <222> LOCATION: (102)...(107)  
128 <223> OTHER INFORMATION: Xaa = any amino acid; 0-2 residues may be missing  
129 <400> SEQUENCE: 1  
W--> 130 Xaa Xaa Xaa Xaa Tyr Xaa  
131 1 5 10 15  
W--> 132 Trp Phe Trp Xaa Ile Xaa Xaa Xaa Xaa Xaa Glu Xaa Xaa Xaa Xaa  
133 20 25 30  
W--> 134 Xaa Xaa Gln Phe Xaa Thr Gly Xaa Xaa Arg Leu Pro Xaa Xaa Gly Phe  
135 35 40 45  
W--> 136 Xaa Xaa Leu Xaa Ile Xaa Xaa  
137 50 55 60  
W--> 138 Xaa Xaa Xaa Xaa Xaa Xaa Leu Pro Xaa Xaa His Thr Cys Phe Asn  
139 65 70 75 80  
W--> 140 Xaa Leu Asp Leu Pro Xaa Tyr Xaa Ser Xaa Xaa Xaa Xaa Xaa Xaa Xaa  
141 85 90 95  
W--> 142 Leu Xaa Xaa Ala Ile Xaa Xaa Xaa Xaa Xaa Xaa Phe  
143 100 105  
144 <210> SEQ ID NO 2

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145 <211> LENGTH: 33  
146 <212> TYPE: PRT  
147 <213> ORGANISM: Homo sapien  
148 <220> FEATURE:  
149 <221> NAME/KEY: VARIANT  
150 <222> LOCATION: (5)...(5)  
151 <223> OTHER INFORMATION: Xaa = any amino acid  
152 <220> FEATURE:  
153 <221> NAME/KEY: VARIANT  
154 <222> LOCATION: (9)...(11)  
155 <223> OTHER INFORMATION: Xaa = any amino acid  
156 <220> FEATURE:  
157 <221> NAME/KEY: VARIANT  
158 <222> LOCATION: (12)...(14)  
159 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid  
(e.g., S,H,P,D,E,T or Y)  
160 <220> FEATURE:  
161 <221> NAME/KEY: VARIANT  
162 <222> LOCATION: (16)...(16)  
163 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid  
(e.g., S,H,P,D,E,T or Y)  
164 <220> FEATURE:  
165 <221> NAME/KEY: VARIANT  
166 <222> LOCATION: (17)...(17)  
167 <223> OTHER INFORMATION: Xaa = any amino acid  
168 <220> FEATURE:  
169 <221> NAME/KEY: VARIANT  
170 <222> LOCATION: (18)...(18)  
171 <223> OTHER INFORMATION: Xaa = hydrophobic residue (e.g., I,V,L or M)  
172 <220> FEATURE:  
173 <221> NAME/KEY: VARIANT  
174 <222> LOCATION: (19)...(19)  
175 <223> OTHER INFORMATION: Xaa = any amino acid  
176 <220> FEATURE:  
177 <221> NAME/KEY: VARIANT  
178 <222> LOCATION: (20)...(20)  
179 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid  
(e.g., S,H,P,D,E,T or Y)  
180 <220> FEATURE:  
181 <221> NAME/KEY: VARIANT  
182 <222> LOCATION: (21)...(21)  
183 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid  
(e.g., S,H,P,D,E,T or Y)  
184 <220> FEATURE:  
185 <221> NAME/KEY: VARIANT  
186 <222> LOCATION: (22)...(22)  
187 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid  
(e.g., S,H,P,D,E,T or Y)  
188 <220> FEATURE:  
189 <221> NAME/KEY: VARIANT  
190 <222> LOCATION: (23)...(23)  
191 <223> OTHER INFORMATION: Xaa = any amino acid  
192 <220> FEATURE:  
193 <221> NAME/KEY: VARIANT  
194 <222> LOCATION: (24)...(24)

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195 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid  
 196 (e.g., S,H,P,D,E,T or Y)

197 <220> FEATURE:

198 <221> NAME/KEY: VARIANT

199 <222> LOCATION: (33)...(33)

200 <223> OTHER INFORMATION: Xaa = independently selected polar amino acid  
 201 (e.g., S,H,P,D,E,T or Y)

202 <400> SEQUENCE: 2

W--> 203 Gly Pro Leu Pro Xaa Gly Trp Glu Xaa Xaa Xaa Xaa Xaa Gly Xaa  
 204 1 5 10 15  
 W--> 205 Xaa Tyr Tyr Xaa Xaa His Asn Thr Xaa Thr Thr Xaa Trp Xaa Xaa Pro  
 206 20 25 30

W--> 207 Xaa

208 <210> SEQ ID NO 3

209 <211> LENGTH: 38

210 <212> TYPE: PRT

211 <213> ORGANISM: Homo sapien

212 <400> SEQUENCE: 3

213 Ser Pro Leu Pro Pro Gly Trp Glu Glu Arg Gln Asp Ile Leu Gly Arg  
 214 1 5 10 15  
 215 Thr Tyr Tyr Val Asn His Glu Ser Arg Arg Thr Gln Trp Lys Arg Pro  
 216 20 25 30

217 Thr Pro Gln Asp Asn Leu  
 218 35

219 <210> SEQ ID NO 4

220 <211> LENGTH: 38

221 <212> TYPE: PRT

222 <213> ORGANISM: Homo sapien

223 <400> SEQUENCE: 4

224 Ser Gly Leu Pro Pro Gly Trp Glu Glu Arg Gln Asp Ile Leu Gly Arg  
 225 1 5 10 15  
 226 Thr Tyr Tyr Val Asn His Glu Ser Arg Arg Thr Gln Trp Lys Arg Pro  
 227 20 25 30

228 Thr Pro Gln Asp Asn Leu  
 229 35

230 <210> SEQ ID NO 5

231 <211> LENGTH: 38

232 <212> TYPE: PRT

233 <213> ORGANISM: Homo sapien

234 <400> SEQUENCE: 5

235 Gly Phe Leu Pro Lys Gly Trp Glu Val Arg His Ala Pro Asn Gly Arg  
 236 1 5 10 15  
 237 Pro Phe Phe Ile Asp His Asn Thr Lys Thr Thr Trp Glu Asp Pro  
 238 20 25 30

239 Arg Leu Lys Ile Pro Ala  
 240 35

241 <210> SEQ ID NO 6

242 <211> LENGTH: 38

243 <212> TYPE: PRT

244 <213> ORGANISM: Homo sapien

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY  
PATENT APPLICATION US/09/385,918

DATE: 09/09/1999

TIME: 10:44:30

Input Set: I385918.RAW

## Line ? Error/Warning

## Original Text

130 W "N" or "Xaa" used: Feature required  
132 W "N" or "Xaa" used: Feature required  
134 W "N" or "Xaa" used: Feature required  
136 W "N" or "Xaa" used: Feature required  
138 W "N" or "Xaa" used: Feature required  
140 W "N" or "Xaa" used: Feature required  
142 W "N" or "Xaa" used: Feature required  
203 W "N" or "Xaa" used: Feature required  
205 W "N" or "Xaa" used: Feature required  
207 W "N" or "Xaa" used: Feature required  
338 W "N" or "Xaa" used: Feature required  
353 W "N" or "Xaa" used: Feature required  
371 W "N" or "Xaa" used: Feature required  
389 W "N" or "Xaa" used: Feature required

Xaa Xaa Xaa Xaa Tyr Xaa Xaa Xaa Xaa Xaa X  
Trp Phe Trp Xaa Ile Xaa Xaa Xaa Xaa Xaa X  
Xaa Xaa Gln Phe Xaa Thr Gly Xaa Xaa Arg L  
Xaa Xaa Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa X  
Xaa Xaa Xaa Xaa Xaa Leu Pro Xaa Xaa X  
Xaa Leu Asp Leu Pro Xaa Tyr Xaa Ser Xaa X  
Leu Xaa Xaa Ala Ile Xaa Xaa Xaa Xaa Xaa X  
Gly Pro Leu Pro Xaa Gly Trp Glu Xaa Xaa X  
Xaa Tyr Tyr Xaa Xaa His Asn Thr Xaa Thr T  
Xaa  
Pro Pro Xaa Tyr  
Xaa Pro Pro Pro Xaa Tyr  
Pro Ala Asp Thr Pro Pro Pro Ala Tyr Xaa P  
Thr Pro Pro Pro Gly Tyr Xaa Ser Glu Asp G